Technical Interview

1. Python Interview Questions:

1. How can you replace string spaces with a given character in Python?

Sol: we can use replace() method to replace string spaces with a given character, it takes 2 arguments : first argument is the old string which is “ ” ,second argument is the new string which is given character.

2. How do you identify and deal with missing values? (Identifying missing values)?

Sol: we can deal with missing values using isnull() method.

3. What is the difference between merge, join, and concatenate?

Sol:

merge : it is used for combining data on common columns or indices.

Join : it creates and returns a new string by concatenating all of the elements in a list.

Concatenate : it is used for obtaining a new string that contains both of the original strings.

4. Why use else in the try/except construct in Python?

Sol: to execute the code when there is no error.

5. What is the Python "with" statement designed for?

Sol: with statement is used in exception handling to make the code cleaner and much more readable, we can use it instead of try statement.

6. What is monkey patching in Python?

Sol: Monkey patching is the technique of dynamic modification of a piece of code at the run time.

7. Explain List, Dictionary, and Tuple comprehensions with examples.

Sol: List, Dictionary, and Tuple are non-homogeneous data structures used to store and organize the data.

List : is used to store multiple items in a single variable.

Items are ordered,mutable, and allow duplicate values.

is created by using square brackets [ ].

Ex: my_list = ['apple', True, 50, 'cherry']

Dictionary : stores key-value pairs.

doesn't allow duplicate keys,ordered.

is created by using curly brackets { }.

Ex: car = {

"Brand" : "BMW",

"Model" : "x6"

}

Tuple : is used to store multiple items in a single variable.

Items are ordered,immutable, and allow duplicate values.

is created by using round brackets ( ).

Ex: tbl = (1, 2, 3, 4, 5)

8. What is the difference between a mutable data type and an immutable data type?

Sol : mutable data type is the data which is allowed to change its value, immutable is unchangeable data.

9. What is `__init__()` in Python?

Sol: it is the constructor of the class , it is used to initialize(assign values) to the data members of the class when an object of the class is created.

10. Given a positive integer num, write a function that returns True if num is a perfect square else False.

Sol :

```
import math as m
def perfectSquareChecker(x) :
    if m.sqrt(x).is_integer() :
        print("True")
    else:
        print("False")
```

Explanation : importing math module to use sqrt method , defining the function and pass x "integer num" as parameter , check if square root of num is integer or not.

11. Given an integer n, return the number of trailing zeroes in n factorial n!.
Sol :

```
def trailingZeros(n):
    count = 0
    i = 5
    while (n / i >= 1):
        count += int(n / i)
        i *= 5
    return count
```

Explanation : Trailing zeros = count of 5s in prime factors of n! , first we need to declare a counter and intialize it with 0 and intialize iterator i with 5 , then check if n/i is greater than or equal 1 or not , if true we will increase our counter with floor n/i and multiply i with 5 untill the condition became false it will return value of counter.

12. Find the missing number in the array. You have been provided with a list of positive integers from 1 to n. All the numbers from 1 to n are present except one number x, and you must find x.
Sol:

```
def missingNum(my_list):
    no_of_elements = len(my_list)
    total_sum = (no_of_elements+1) * (no_of_elements+2) / 2
    list_sum = sum(my_list)
    return total_sum - list_sum
```

Explanation : first we need to find length of the list to calculate total sum of numbers from 1 to n using this algorithm => n(n+1)/2 , then find sum of list's numbers , now we can subtract total sum with sum of list's numbers and get the missing number.